

# **EXHIBIT 14**

## BLAST 2 SEQUENCES

This tool produces the alignment of two given sequences using **BLAST** engine for local alignment.  
The stand-alone executable for blasting two sequences (bl2seq) can be retrieved from NCB<sup>I</sup> ftp site

**Reference:** Tatiana A. Tatusova, Thomas L. Madden (1999), "Blast 2 sequences - a new tool for comparing protein and nucleotide sequences", FEMS Microbiol Lett, 174:247-250

Program **blastn** Matrix **BLOSUM62**

Parameters used in BLASTN program only:

Reward for a match:  Penalty for a mismatch:

Use Mega BLAST Strand option  Not Applicable

Open gap  and extension gap  penalties

gap x\_dropoff  expect  word size  Filter  Alignments

Sequence 1 Enter accession or GI  or download from file

or sequence in FASTA format from:  to:

```
DYGNSPFYEESTULTHALSSQPTLISSEASLNQLRSUDMFSGLNVPHYGWQGLWSWGWAQTQ  
DPEPASSATITDPKKANRFHRTLLLTLWLPAGYVPSPKHRSPLIANTLWGNMILLATESLKNS  
AELTPSDHPFWGITGGGLGMMVYQEPRHENHPGFHMRSGGYFAGMLAGCQHTFSLKFSQTYT  
KLNERYAKNNVSKNYSQCGEMLFSLQEGFLLAKLVLGLYSYGDHNCHHFYTQGENLTSQGT  
FRSQTMGGAVFFDLPMKPGSTHILTAPFLGALGIYSSLSHFTTEVGAYPRSFSTKTPLINV  
LVEIGVKGSFMNATQRQPQAWTVELAYQPVLYRQELEIATQLLASKGIWFGSGSPSSRHAMS  
YKISQQTQPLSWLTLHFQYHGFYSSSTFCNYLNGEIALRF.
```

Sequence 2 Enter accession or GI  or download from file

or sequence in FASTA format from:  to:

```
cttwccaisru rmggygavri arviktavnk eremgeaiaag asgnittstis  
klvertnpay gkhmqdaemf tnaacmtlni wdrfdvfctl gatsgylkgn  
sasfnlvglf gdgvnatkpka adsipnvqln qsvvelytdt tawsvgara  
alwecgcatl gasfqaqsk pkeelnvnic naaeftinkp kgyvgkefpl  
ditagtdaat gtkdasidyh ewqasilsy rlmftpyig vkwrasfds  
dtiriaqprl vtpvvddtl nptiagcgs aganteggis dtmqivslql  
nkmksrkscg iavgttivda dkyavtvetr lideraahvn aqfrf
```

Comments and suggestions to: [blast-help@ncbi.nlm.nih.gov](mailto:blast-help@ncbi.nlm.nih.gov)



## Blast 2 Sequences results

BLAST 2 SEQUENCES RESULTS VERSION BLASTP 2.2.3 [Apr-24-2002]

Matrix  gap open:  gap extension:

x\_dropoff:  expect:  wordsize:  Filter  Align

Sequence 1 lcl|seq\_1 Length 955 PMPE PTA-2462

Sequence 2 lcl|seq\_2 Length 394 mom A

No significant similarity was found

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Program  Blastp  Matrix  BLOSUM62

Parameters used in BLASTN program only:

Reward for a match:  Penalty for a mismatch:

Use Mega BLAST Strand option  Not Applicable

Open gap  11 and extension gap  1 penalties

gap x\_dropoff  50 expect  10.0 word size  3 Filter  Align

Sequence 1 Enter accession or GI  seq id  2 or download from file

or sequence in FASTA format from:  0 to:  0

```
ALSSQPMMLSTSEASLNLQLRSULMDFSGLNVPHYGLWQGLWIWGWAQTQDPEFASSATITDPQ
KANRFHRTLLLTLWLPAGYVESPCKHRSPLIANLWGNMILATESLKNSAELTPSDHPFWGIC
GGGLGMMVYQDPRENHPGFHMRS SGYSAGMIAGQTHTPSLKF SQTYTKLNERYAKNNVSSK
NYSCQGEMLFLSLQEGFLLTKLVGLSYGDHNCHHFYTQGENLTSQGTFRSQTMGGAVFFDL
PMRPGGSTHILTAPFLGALGIYSSLSHFTEVGAYPRSFSTKTPLINVLVPIGVKGSMNAT
QRPAWTVELAYOPVLYRQEFGIATQLLASKGIWFGSGSPSRHAMSYKISQQTQPLSWLT
LHFQYHGFYSSSTFCNYLNGETALRF
```

Sequence 2 Enter accession or GI  MOMP or download from file

or sequence in FASTA format from:  0 to:  0

```
cttwccdaism rmggygarvri arviktcavnk eremgealag asgnittis
klvertnpay gkhmqdaemf tnaacmtlni wdrfdvfctl gatsgylkgn
sasfnlvglf gdgvnatvka adsipnvqln qsvvelytdt tawsvgara
alwecgcatalog pkieelnvcl naaeftinkp kgyvgkefpl
ditagtdaat gtkdasidyh ewqaslsisy rlnmftpyig vkwrsrafds
dtiriaqprl vtpvvdittl nptiagcgsy aganteggis dtmqivslql
nmkmsrkscg iavgttivda dkyavtvetr lideraahvn aqfrf
```

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BLAST 2 SEQUENCES RESULTS VERSION BLASTP 2.2.3 [Apr-24-2002]

Matrix  BLOSUM62  gap open:  gap extension:

x\_dropoff:  expect:  wordsize:  Filter  Alignments

Sequence 1 lcl|seq\_1 Length 965 SEQIDNUZ

Sequence 2 lcl|seq\_2 Length 394 MOMP

No significant similarity was found